Application of simulated annealing to solve multi-objectives for aggregate production planning

ABSTRACT

Aggregate production planning (APP) is one of the most significant and complicated problems in production planning and aim to set overall production levels for each product category to meet fluctuating or uncertain demand in future and to set decision concerning hiring, firing, overtime, subcontract, carrying inventory level. In this paper, we present a simulated annealing (SA) for multi-objective linear programming to solve APP. SA is considered to be a good tool for imprecise optimization problems. The proposed model minimizes total production and workforce costs. In this study, the proposed SA is compared with particle swarm optimization (PSO). The results show that the proposed SA is effective in reducing total production costs and requires minimal time.

Keyword: Aggregate production planning; Simulated annealing; Production planning; Multi-objective linear programming